STIC Search Report
EIC 2100

Scientific & Technical Information Center
USPTO

STIC Database Tracking Number: 121937

TO: Paula Klimach **Location: 4R02** **Art Unit : 2135** **Thursday, May 13, 2004** **Case Serial Number: 09/357483**	**From: David Holloway** **Location: EIC 2100** **PK2-4B30** **Phone: 308-7794** **david.holloway@uspto.gov**

Search Notes

Dear Examiner Klimach,

Attached please find your search results for above-referenced case.
Please contact me if you have any questions or would like a re-focused search.

David

sira
Search and Information Resources Administration

STIC EIC 2100 Search Request Form

121937
60

Today's Date: 7 May 2004

What date would you like to use to limit the search?
Priority Date: July 20, 1999 Other:

Name PAULA KLIMACH
AU 2135 Examiner # 79801
Room # 4R02 Phone 305 8421
Serial # 09357483

Format for Search Results (Circle One):
(PAPER) DISK EMAIL

Where have you searched so far?
USP DWPI EPO JPO ACM IBM TDB
IEEE INSPEC SPI Other _____

Is this a "Fast & Focused" Search Request? (Circle One) (YES) NO
A "Fast & Focused" Search is completed in 2-3 hours (maximum). The search must be on a very specific topic and meet certain criteria. The criteria are posted in EIC2100 and on the EIC2100 NPL Web Page at http://ptoweb/patents/stic/stic-tc2100.htm.

What is the topic, novelty, motivation, utility, or other specific details defining the desired focus of this search? Please include the concepts, synonyms, keywords, acronyms, definitions, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract, background, brief summary, pertinent claims and any citations of relevant art you have found.

System wherein the endpoints of an interval ~~are~~ calculated from a random number. The system is preferably a statistic study and finding the boundaries using random number because we want to reduce the predictability of the samples.

STIC Searcher David Holloway Phone 308-7794
Date picked up 5-13-04 Date Completed 5-13-04

DTA 06-405
38 min

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Set     Items   Description
S1    9299037   DEFIN? OR DEMARC? OR DESCRIBE? OR CALCULAT?
S2    4221394   BORDER? OR ENDPOINT? OR LIMIT? OR BOUNDAR? OR END()POINT?
S3    9752128   POPULATION? OR SET OR SETS OR SAMPL? OR GROUP?
S4    1275162   RANDOM? OR PSEUDORANDOM?
S5    2143232   STATISTIC? OR SAS
S6        992   S1(2N)S2 AND S3 AND S4
S7        242   S5 AND S6
S8         27   S7 AND (AUTOMAT? OR COMPUTERI? OR PROGRAM? OR SOFTWAR? OR -
            ELECTRONIC?)
S9         20   S8 AND (CALCULAT? OR ALGORITHM? OR FORMULA? OR SYSTEM?)
S10      9752   S2(N)(CALCULAT? OR ALGORITHM? OR FORMULA?)
S11        10   S7 AND S10
S12        36   S8 OR S11
S13        29   RD (unique items)
S14        23   S13 NOT PY>1999
File   8:Ei Compendex(R) 1970-2004/May W1
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         (c) 2004 ProQuest Info&Learning
File 202:Info. Sci. & Tech. Abs. 1966-2004/Feb 27
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File  34:SciSearch(R) Cited Ref Sci 1990-2004/May W1
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         (c) 2004 The HW Wilson Co.
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File   1:ERIC 1966-2004/Apr 29
         (c) format only 2004 The Dialog Corporation
File   7:Social SciSearch(R) 1972-2004/May W1
         (c) 2004 Inst for Sci Info
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01690199 ORDER NO: AAD99-18327

UNCERTAINTY ANALYSIS OF TRANSPORT-TRANSFORMATION MODELS (STOCHASTIC RESPONSE SURFACE METHOD, RISK ASSESSMENT, REACTIVE PLUME MODEL)

Author: ISUKAPALLI, SASTRY S.
Degree: PH.D.
Year: 1999
Corporate Source/Institution: RUTGERS THE STATE UNIVERSITY OF NEW JERSEY - NEW BRUNSWICK (0190)
Director: PANOS G. GEORGOPOULOS

Source: VOLUME 60/02-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 741. 198 PAGES
Descriptors: ENGINEERING, CHEMICAL ; ENVIRONMENTAL SCIENCES ; **STATISTICS**
Descriptor Codes: 0542; 0768; 0463

Characterization of uncertainty associated with transport-transformation models is often of critical importance, as for example in cases where environmental and biological models are employed in risk assessment. However, uncertainty analysis using conventional methods such as standard Monte Carlo or Latin Hypercube **Sampling** may not be efficient, or even feasible, for complex, computationally demanding models.

This work introduces a computationally efficient alternative method for uncertainty propagation, the Stochastic Response Surface Method (SRSM). The SRSM approximates uncertainties in model outputs through a series expansion in normal **random** variables (polynomial chaos expansion). The unknown coefficients in series expansions are **calculated** using a **limited** number of model simulations. This method is analogous to approximation of a deterministic system by an algebraic response surface.

Further improvements in the computational efficiency of the SRSM are accomplished by coupling the SRSM with ADIFOR, which facilitates **automatic** calculation of partial derivatives in numerical models coded in Fortran. The coupled method, SRSM-ADIFOR, uses the model outputs and their derivatives to calculate the unknown coefficients.

The SRSM and the SRSM-ADIFOR are general methods, and are applicable to any model with **random** inputs. The SRSM has also been implemented as a black-box, web-based tool for facilitating its easy use.

The SRSM and the SRSM-ADIFOR have been applied to a **set** of environmental and biological models. In all the case studies, the SRSM required an order of magnitude fewer simulations compared to conventional methods, and the SRSM-ADIFOR required even fewer simulations. In addition to their computational efficiency, these methods directly provide sensitivity information and individual contributions of input uncertainties to output uncertainties; conventional methods require substantially larger numbers of simulations to provide such information. Thus, the SRSM and the SRSM-ADIFOR provide computationally efficient means for uncertainty and sensitivity analysis.

Finally, this research addresses uncertainties associated with model structure and resolution with application to photochemical air quality modeling. A three dimensional version of the regulatory Reactive Plume Model (RPM), RPM-3D, has been developed and applied to understand model uncertainty.

01362968 ORDER NO: AAD94-17910

STRUCTURE CHARACTERIZATION IN INHOMOGENEOUS MEDIA BY MEANS OF ULTRASONIC SCATTERING: MONTE CARLO METHODS AND EXPERIMENTS (COMPOSITES, SOFT TISSUE)

Author: GROLEMUND, DANIEL LEE

Degree: PH.D.
Year: 1994
Corporate Source/Institution: UNIVERSITY OF CALIFORNIA, IRVINE (0030)
Chair: CHEN S. TSAI
Source: VOLUME 55/02-B OF DISSERTATION ABSTRACTS INTERNATIONAL. PAGE 455. 193 PAGES
Descriptors: PHYSICS, ACOUSTICS; ENGINEERING, **ELECTRONICS** AND ELECTRICAL
Descriptor Codes: 0986; 0544

The dissertation concerns the extraction, via signal processing, of structural information from the scattering of low megahertz, low power ultrasonic waves in two specific media of great practical interest--fiber reinforced composites and soft biological tissue.

In fiber reinforced composites, this work represents the first measurement of second-order **statistics** in porous laminates, and the first application of Monte Carlo methods to acoustical scattering in composites. A numerical model of porous composites backscatter was derived which is suitable for direct numerical implementation. The model treats the total backscattered field as the result of a two-mode scattering process. In the first mode, the void-free composite is treated as a continuously varying medium in which the density and compressibility are functions of position. The second mode is the distribution of gas voids that failed to escape the material before gel, and are dealt with as discrete Rayleigh scatterers. Convolution techniques were developed that allowed the numerical model to reproduce the long range order seen in the void-free composite.

The results of the Monte Carlo derivation were coded, and simulations run with data **sets** that duplicate the properties of the composite **samples** used in the study.

In the area of tissue characterization, two leading methods have been proposed to extract structural data from the raw backscattered waveforms. Both techniques were developed from an understanding of the periodicities created by semi-regularly spaced, coherent scatterers. In the second half of the dissertation, a complete analytical and numerical treatment of these two techniques was done from a first principles approach.

Computer simulations were performed to determine the general behavior of the algorithms. The main focus is on the envelope correlation spectrum, or ECS. Monte Carlo methods were employed to examine the signal-to-noise ratio of the ECS in terms of the variances of the backscattered amplitude, phase, spacing, and pulse broadening due to attenuation. Extensive Monte Carlo methods have quantified performance limits of the ECS by **calculating** the **limits** on the S/N ratio in terms of the **randomization** of scattering parameters. A new result is that the S/N ratio was found to be controlled by variance of the scattering amplitude and spatial separation of the scattering centers. (Abstract shortened by UMI.)

839710 ORDER NO: AAD84-07559

STOCHASTIC MODEL BASED TECHNIQUES FOR CLASSIFICATION AND SEGMENTATION OF TEXTURES

Author: KHOTANZAD, ALIREZA

Degree: PH.D.
Year: 1983
Corporate Source/Institution: PURDUE UNIVERSITY (0183)
Source: VOLUME 44/12-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 3887. 275 PAGES
Descriptors: ENGINEERING, **ELECTRONICS** AND ELECTRICAL
Descriptor Codes: 0544

This study is concerned with the classification and segmentation of textures. The main emphasis is on the **statistical** structure of the texture rather than its visual structure. The texture is viewed as a two-dimensional stochastic spatial process, i.e. a **random** field. Hence, spatial interaction models which capture the spatial structure of **random** fields are used for texture modelling. A class of such models known as simultaneous autoregressive (SAR) models is used to represent the texture. The estimated parameters of a SAR model fitted to an image are suggested as features for its texture. Results of supervised classification experiments using these features indicate that they are powerful. However these features are rotation variant, i.e. change if the texture is rotated with respect to the camera.

In order to get a rotation invariant feature **set** , a new class of spatial interaction models called circular autoregressive (CAR) is developed. In a CAR model, any pixel value is written as a finite sum of intensity values at locations on a circular neighborhood around it and a noise sequence. The parameters of this model are rotation invariant. The estimated CAR parameters plus other rotation invariant functions defined on SAR parameters are used as textural features. These features have direct interpretation in terms of visual attributes of texture. The strong discriminating power of the proposed features is shown by using them in supervised classification experiments involving differently oriented test and training **samples** from each class.

A new technique is presented which segments an image into regions of similar texture when no prior information about the textures is available. The image is scanned by a small window and a number of textural features extracted from each window. Different pairs of features corresponding to various windows are plotted. Some of these 2-d plots contain distinct clusters corresponding to different texture types. Only those two features having the highest clustering power are used. Segmentation is done by **defining** decision **boundaries** on the clusters and mapping them back into the spatial domain. Several experimental results are presented.

14/5/10 (Item 4 from file: 6)
DIALOG(R)File 6:NTIS

0084364 NTIS Accession Number: AD-607 909/XAB
Sampling **for Reliability Determination, an Improved Scheme**
(Rept. for May-Sep 64)
Beckham, W. C.
Air Force Weapons Lab Kirtland AFB N Mex
Corp. Source Codes: 888888888
Report No.: WL-TR64 116
Oct 64 2p
Journal Announcement: USGRDR6501

NTIS Prices: PC A02
A unique solution is presented for the ancient **sampling** problem posed as follows: One is to test a finite **random sample** from a large **population** for some property that an unknown fraction of the **population** possesses. Required: To deduce the most accurate possible probabilistic statements in the following sense. For a specified probability that the unknown fraction be larger than some lower **limit**, **calculate** from the test result the largest possible lower limit that will have at least this probability and the smallest possible upper limit that will have at most this probability. Similarly, specify narrowest possible ranges for upper limits. These formulas can then be applied to determine for specified lower and upper limits two probabilities for their enclosure of the unknown fraction, the larger of which is the lowest possible upper limit and the smaller of which is the largest possible lower limit. It must be understood that these probabilistic statements refer to the conceptual or actual results of continued **sampling** for which the enclosure probabilities are held constant and the differing test results give a distribution of lower and upper limits. A 'best' formula is also given which lies between the others and has a zero value of a reasonably defined average error. Use of the proposed scheme will reduce needed **sample** sizes as compared to usual **statistical** procedure in which only 'pessimistic' relations are used. (Author)
Descriptors: **SAMPLING** ; RELIABILITY; PROBABILITY; DIFFERENTIAL EQUATIONS ; ERRORS; **STATISTICAL** PROCESSES

14/5/11 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

12985359 PASCAL No.: 97-0264316

Blinded subjective rankings as a method of assessing treatment effect : A large sample **example from the Systolic Hypertension in the Elderly** Program **(SHEP)**

BRITTAIN E; PALENSKY J; BLOOD J; WITTES J
Statistics Collaborative, Inc., 1710 Rhode Island Ave., NW, Suite 200, Washington, DC 20036, United States

Journal: Statistics in medicine, 1997, 16 (6) 681-693
ISSN: 0277-6715 Availability: INIST-19624; 354000064722530070
No. of Refs.: 14 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United Kingdom
Language: English

Because many **randomized** clinical trials study more than one important outcome variable, evaluation of efficacy is often difficult and not completely satisfactory. This paper considers the use of a procedure for **endpoint** determination **described** by Follmann et al., that allows raters to integrate subjectively all relevant information about an individual's clinical course into a single univariate assessment. To explore the method's feasibility, we tested the procedure with data from a completed clinical trial, the Systolic Hypertension in the Elderly **Program** (SHEP). We provided raters blinded to treatment assignment with cards that schematically represent the clinical trajectories of SHEP study participants. The raters independently ranked these trajectories. The method combined ranks across raters to determine a single rank for each study participant; we used a rank procedure to test treatment effect. The major findings were: (i) the raters showed a high level of concordance of rankings; (ii) tests of treatment effect were highly **statistically** significant; (iii) three **statistical** methods were effective for implementing the ranking in the large study size case. These methods were use of: (a) scoring rules; (b) incomplete block designs, and (c) categorical ranking.

English Descriptors: Hypertension; Systolic pressure; Human; Elderly; Treatment efficiency; Clinical trial; **Statistical** model; Feasibility; Rank **statistic** ; **Statistical** test; Categorization; Placebo effect
Broad Descriptors: Cardiovascular disease; Appareil circulatoire pathologie ; Aparato circulatorio patologia

French Descriptors: Hypertension arterielle; Pression systolique; Homme; Vieillard; Efficacite traitement; Essai clinique; Modele statistique; Faisabilite; Statistique rang; Test statistique; Categorisation; Effet placebo

14/5/12 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

06110921 Genuine Article#: XV590 Number of References: 7
Title: Application of boundary calculation **methodologies to** group **sequential testing in general parametric models**
Author(s): Shen LZ; AlKhalidi HR
Corporate Source: PROCTER & GAMBLE CO,BIOSTAT & MED SURVEILLANCE/CINCINNATI//OH/45242
Journal: COMMUNICATIONS IN STATISTICS-THEORY AND METHODS, 1997, V26, N9, P 2173-2190
ISSN: 0361-0926 Publication date: 19970000
Publisher: MARCEL DEKKER INC, 270 MADISON AVE, NEW YORK, NY 10016
Language: English Document Type: ARTICLE
Geographic Location: USA
Journal Subject Category: STATISTICS & PROBABILITY
Abstract: For clinical trials with interim analyses, there have been methodologies and **software** to **calculate boundaries** for comparing binomial, normal, and survival data from two treatment **groups** . Jennison & Turnbull (1991) extended Pocock (1977) and O'Brien-Fleming (1979) boundaries to t-tests, chi(2)-tests and F-tests for comparing normal data from several treatment **groups** . This paper demonstrates that the above boundaries can be applied to a wide variety of test **statistics** based on general parametric settings. We show that asymptotically the chi(2) boundaries as well as the corresponding nominal significance levels calculated by Jennison & Turnbull can be applied to interim analyses based on the score test, the Wald test, and the likelihood ratio test for general parametric models. Based on the results of this paper, currently available **software** in **group** sequential testing can be used to calculate the nominal significance levels (or boundaries) for **group** sequential testing based on logistic regression, ANOVA, and other parametric methods.
Descriptors--Author Keywords: interim analysis ; likelihood ratio test ; nominal significance level ; partial sum ; score test ; Wald test
Identifiers--KeyWord Plus(R): CLINICAL-TRIALS
Research Fronts: 95-1215 002 (**GROUP** SEQUENTIAL CLINICAL-TRIALS; **RANDOMIZED** PLACEBO-CONTROLLED MULTICENTER EVALUATION; SAFETY MONITORING BOARDS)
Cited References:
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*PEST, 1993, PLANN EV SEQ TRIALS
BICKEL PJ, 1993, EFFICIENT ADAPTIVE E
BICKEL PJ, 1977, MATH STATISTICS
JENNISON C, 1991, V78, P133, BIOMETRIKA
OBRIEN PC, 1979, V35, P549, BIOMETRICS
POCOCK SJ, 1977, V64, P191, BIOMETRIKA